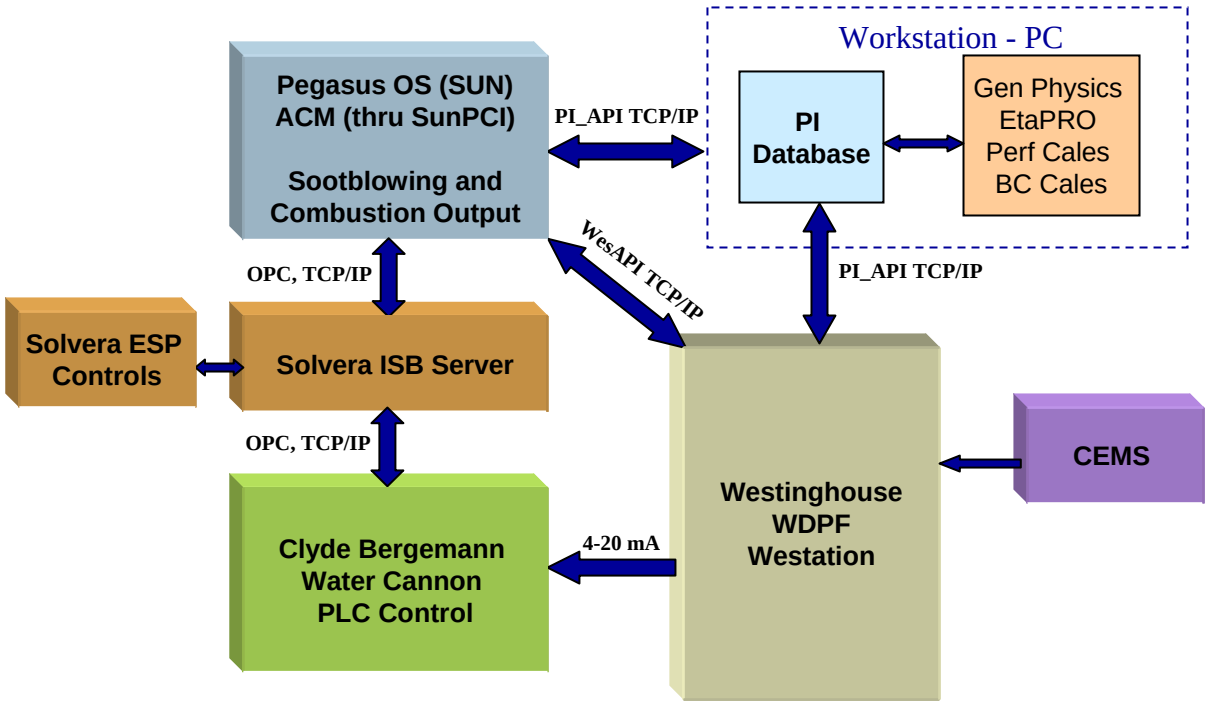
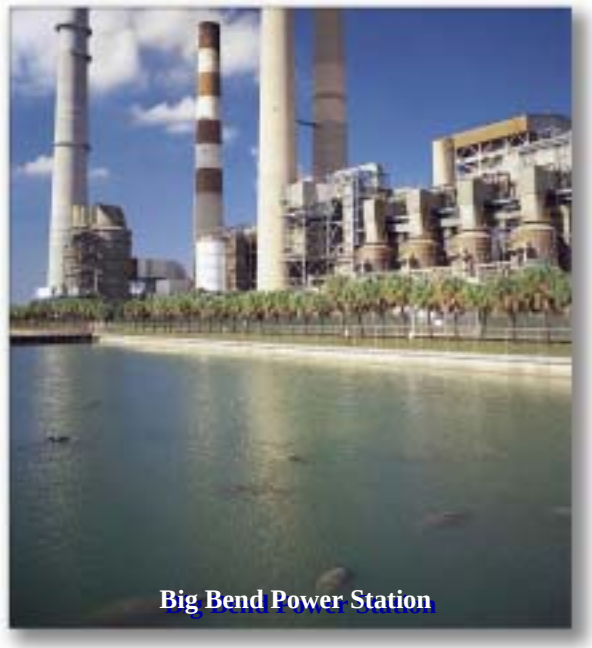
Tampa Electric Power Company

- Neural Network Sootblowing Optimization using advanced techniques.
- Technology expected to reduce NOx by up to 20 - 30%, improve heat rate by up to 2%, and reduce opacity by up to 5%.
- Total Project funding: $2.4 million ($1 million DOE).





A PPII Clean Coal Project

Background

- **Tampa Electric Company will demonstrate a neural network intelligent sootblowing system that:**
  - Optimizes boiler operation
  - Systematically controls boiler fouling
  - Links with state-of-art controls/instruments
- **Project Location**
  - Big Bend Power Station, Apollo Beach, FL
- **Team Member**
  - Pegasus Technology, Inc.
- **Boiler fouling degrades performance and affects emissions:**
  - Compromises plant efficiency by impeding heat transfer to the working fluid (water/steam).
  - Increases peak temperatures leading to increased NOx emissions.

Technology Uniqueness

- Project will determine how to more effectively dislodge soot that can build up inside a boiler.
- Computer controlled sootblowing technology provides optimum cleaning of boiler surfaces.
- Uses unique, on-line, adaptive software allowing control based in real-time events and boiler conditions.

Schedule

- **Project Start**
  - Construction Started July 2002
- **NEPA Process**
  - FONSI completed June 2002
- **Testing**
  - Started January 2003
- **Project Completion**
  - March 2005 (planned)

Potential Benefits

- **Technology improves overall plant reliability and operations by reducing production costs, while reducing emissions.**
  - NOx reduced up to 20-30% or more
  - Heat rate improved as much as 2%
  - Particulate emissions reduced ~5%

- **As compared to competing technologies, this cost-effective technology can be readily adapted to virtually any pulverized-coal boiler.**